REMARKS

This Amendment, submitted in response to the Office Action dated June 29, 2009, is

believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable

reconsideration on the merits is respectfully requested.

Claims 1-28 are all the claims pending in the application. Applicant has amended claims

1, 6, 11, and 19.

I.   Rejection of claims 1, 3-6, 8-11, 13, 17-19, 21, and 25-28 under 35 U.S.C. § 103

Claims 1, 3-6, 8-11, 13, 17-19, 21, and 25-28 are rejected under 35 U.S.C. § 103(a) as

being unpatentable over Liu et al. (USP 7,184,421; hereafter "Liu") in view of Flammer, III (US

5,488,608). Applicant respectfully traverses the rejection.

Independent claim 1 recites:

> A system for reliably broadcasting a data packet under an ad-hoc network
> environment, the system comprising:
>
> **a comparing unit which compares a first relay node sequence number with a
> second relay node sequence number, the first relay node sequence number being
> contained in a management packet transmitted from a predetermined neighboring
> node received by at least one node transmitting the data packet to the
> predetermined neighboring node, the second relay node sequence number being
> stored in a neighbor table of the at least one node;**
>
> a memory unit which stores information of the data packet before the data packet
> is transmitted to the predetermined neighboring node, wherein the information of the data
> packet comprises the second relay node sequence number; and
>
> **a control unit which determines whether or not the data packet is
> retransmitted to the predetermined neighboring node by the at least one node
> according to a result of the comparison,**
>
> **wherein the comparing is performed in the at least one node transmitting the
> data packet.**

Therefore, a feature of an exemplary embodiment of the present invention is, <u>after</u>
<u>transmitting a data packet, comparing a first relay node sequence number, included in a</u>
<u>management packet transmitted by a node that has received the data packet to a predetermined</u>
<u>neighboring node that has transmitted the data packet, with a second relay node sequence</u>
<u>number, stored in a neighbor table of the node that has transmitted the data packet. Further, it is</u>
<u>determined whether or not the data packet is retransmitted according to the result of the</u>
<u>comparison</u>.

Specifically, if the first relay node sequence number and the second relay node sequence
number are the same, it determined that the data packet has been transmitted normally, therefore,
the data packet is not retransmitted. If the first relay node sequence number and the second relay
node sequence number are not the same, it is determined that the data packet has not been
transmitted normally, so the data packet is retransmitted.

Hence, an exemplary embodiment of the present invention can transmit data reliably
while reducing overload of the entire system and packet loss in an ad hoc network environment.

On page 3 of the Office Action, the Examiner asserts that column 29, lines 26-32 and
column 14, lines 11-22 of Liu teaches the claimed comparing unit.

Column 29, lines 26-32 of Liu discloses:

> "When a node receives a unicast message, it first
> determines whether <u>the message is a duplicate by comparing</u>
> <u>the message sequence number and originating node identifier</u>
> <u>against a list containing similar information from</u>
> <u>previously received messages.</u> If the received message is
> not a duplicate and the designated destination matches the
> identifier of the receiving node, the message is forwarded
> to a unicast traffic destination unit in the receiving CFM
> node."

Column 14, lines 11-22 of Liu discloses:

"Ad-hoc, wireless, mobile networks have the potential
to be extremely dynamic. Mobile nodes, for example could
simply move out of range or disappear due to equipment
failure or a variety of other reasons. Therefore, in order
to maintain the integrity of the network's routing
infrastructure, node neighbor tables periodically must be
searched and stripped of potentially invalid information.
Upon the receipt of each beacon status message, a CFM node
will review its neighbor set table to determine if it
includes neighbors from which a beacon status message has
not been received for a dynamically configurable number (K)
of continuous beacons."

Therefore, Liu discloses determining whether a **message is a duplicate** by comparing the message sequence number and the originating node identifier against a list containing similar information from previously received messages **by the node that has received the unicast message** (which the Examiner asserts corresponds to the data packet of the present invention).

Also, in Liu, it is determined **whether a message is a duplicate** by performing a comparison in the node that has received the unicast message. However, in an exemplary embodiment of the present invention, the first relay sequence number and the second relay sequence number are compared to determine whether the data packet needs to be retransmitted.

Also, in an exemplary embodiment of the present invention, **the first relay node sequence number is included in the management packet transmitted from the node that has received the data packet.** Liu discloses the use of beacon status messages. Therefore, in Liu, ACK messages are required in order to determine whether a data packet has been normally transmitted. See column 18, line 40 to column 19, line 47. This can result in a collision at the time of ACK transmission. However, in the present invention, the first relay node sequence number in a management packet is used which can thus prevent collision.

Claim 1 recites, *inter alia* "wherein the comparing is performed in the at least one node transmitting the data packet."

In an exemplary embodiment of the present invention, after transmitting the data packet, **the node that has transmitted the data packet** compares the first relay sequence number with the second relay sequence number. However, in Liu, the message sequence number and the originating node identifier are compared with the list by the node that has received the message. Therefore, Liu does not teach this aspect of the claims.

For at least the above reasons, Liu does not teach the claimed elements. Further, Flammer, III does not cure deficiency of Liu.

Accordingly, Applicant respectfully submits that claim 1 should be allowable because Liu and Flammer, III, alone or in combination, do not teach or suggest all the elements of independent claim 1.

Further, Applicant respectfully submits that independent claims 6, 11 and 19 should be allowable over Liu and Flammer, III for at least the same reasons as claim 1.

Applicant respectfully submits that dependent claims 2-5, 7-10, 12-18, and 20-28 are also patentable at least by virtue of their dependency on independent claims 1, 6, 11, and 19, respectively.

II.   Rejection of claims 2, 7, 12 and 20 under 35 U.S.C. § 103

Claims 2, 7, 12 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Liu in view of Flammer, III as applied to claims 1, 6, 11 and 19 above, and further in view of Ogier (US 7,031,288).

Ogier does not cure the above-noted deficiencies of Liu and Flammer, III with regard to claims 1, 6, 11 and 19. Accordingly, Applicant respectfully submits that claims 2, 7, 12 and 20 should be allowable by virtue of their dependency on claims 1, 6, 11 and 19, respectively.

III.   Rejection of claims 14-16 and 22-24 under 35 U.S.C. § 103

Claims 14-16 and 22-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Liu et al in view of Flammer, III as applied to claims 11, 15, 19 and 23 above, and further in view of Riihinen et al.(USP 6,697,331 B1) and Zhu et al. (USP 5,768,527).

Riihinen and Zhu do not cure the above-noted deficiencies of Liu and Flammer, III with respect to claims 11 and 19. Accordingly, Applicant respectfully submits that claims 14-16 and 22-24 should be deemed allowable by virtue of their dependency on claims 11 and 19.

IV.   Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue

Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any

overpayments to said Deposit Account.

Respectfully submitted,

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